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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,579

09/20/2006

Eiichi Kaji

2006_1387A

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08/19/2008

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EXAMINER

LU, C CAIXIA

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

08/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-3 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the polymethylaluminoxane composition in toluene have the specified limitations, does not reasonably provide enablement for the polymethylaluminoxane composition in any solvent to meet the specified limitations of the instant claims. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. The viscosity of the same aluminoxane composition varies with the solvent; the specification only supports the aluminoxane composition with toluene as solvent.

Claim Rejections - 35 USC § 102/103

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Smith et al. (US 5,831,109).

Smith's Examples 2 and 4 demonstrate the preparation of the polymethylaluminoxane (PMAO) composition substantially free of trimethylaluminum (TMAL) by reacting TMAL and benzoic acid in toluene with catalytic amount of polyaluminoxane (PMAO). It is noted that Smith does not expressly disclose the viscosity of the PMAO prepared from the Examples. However, in Smith's PMAO preparation process, the reaction between TMAL and benzoic acid is quantitative, therefore, the molecular weight of PMAO, which determines the viscosity, can be controlled by varying the ratio of TMAL to benzoic acid. As the TMAL/benzoic acid increases, the molecular weight of PMAO decreases, which reflects in lowered PMAO viscosity. It is noted that the ratios of TMAL/O of benzoic acid in Smith's Examples 2 and 4 are 1.27 and 1.25 respectively, which are about the same as the TMAL/O ratio of 1.26 of applicants' Example 5. Therefore, one would have expected the viscosity of those examples to inherently meet the limitation of the instant claims.

Even if the claimed viscosity are not inherent in the PMAO composition of the prior art examples, it would still have been obvious to a skilled artisan to prepare PMAO composition with lowered viscosity to prevent the gel formation.

Once a product appearing to be substantially identical is found and a 35 USC 102/103 rejection made, the burden of proof is shifted to the applicants to show an unobvious difference. In re Fitzgerald, 205 USPQ 594. In re Fessmann, 180 USPQ

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324. Applicants have not met their burden to demonstrate an unobvious difference between the claimed product and the products of the prior art examples.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as obvious over Smith et al. (US 5,831,109).

Smith's teaching is relied upon as shown above. It is noted that Smith does not expressly use toluic acid; however, Smith does expressly disclose that non-limited carboxylic acid can be used in the in the PMAO preparation process. It would been obvious to use any carboxylic acid such as toluic acid in the PMAO preparation process since toluic acid is inexpensively commercially available and have very good solubility in toluene.

Thus, it would have been obvious to a skilled artisan at the time the invention was made to employ Smith's teaching to prepare a PMAO composition substantially free of TMAL with various viscosities since such is within the scope of Smith's teaching and in the absence of any showing criticality and unexpected results.

Response to Arguments

7. Applicant's arguments with respect to the rejections of previous Office Action have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.

/Caixia Lu/
Caixia Lu, Ph. D.
Primary Examiner